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☐ 1: [J Surg Res. 1992 Jun;52\(6\):537-42.](#)

### Endotoxin promotes synergistic lethality during concurrent *Escherichia coli* and *Candida albicans* infection.

**Burd RS, Raymond CS, Dunn DL.**

Department of Surgery, University of Minnesota, Minneapolis 55455.

Previous studies have suggested that the lipopolysaccharide (LPS, endotoxin) component of the gram-negative bacterial cell wall is a key virulence factor that serves to enhance mortality during infections in which fungi and gram-negative bacteria are copathogens. To test this hypothesis, mice were challenged ip with *Escherichia coli* 0111:B4, *Candida albicans*, or both, and the effect of administration of anti-*E. coli* 0111:B4 LPS monoclonal antibody (mAb) 8G9 on endotoxemia, bacteremia, and mortality was assessed. *E. coli* ( $2 \times 10^7$  colony-forming units (CFU)) plus *C. albicans* ( $6 \times 10^7$  CFU) infection produced 100% mortality at 7 days, compared to the relatively low mortality caused by infection with either *E. coli* or *C. albicans* alone (20 and 3%, respectively,  $P$  less than 0.01). Administration of mAb 8G9 to animals receiving both pathogens reduced mortality (100% versus 14%,  $P$  less than 0.05), endotoxemia ( $3653 \pm 3187$  versus  $2 \pm 2$  endotoxin units (EU),  $P$  less than 0.01), and bacteremia ( $4.2 \pm 2.3$  versus  $1.1 \pm 2.1$  log(CFU/ml),  $P$  less than 0.01) compared to animals receiving saline alone. In a separate series of experiments, purified *E. coli* 0111:B4 LPS was administered in place of viable *E. coli*. The simultaneous injection of 200 micrograms *E. coli* LPS and *C. albicans* ( $6 \times 10^7$  CFU) produced 93% mortality at 7 days, compared to the low mortality that occurred following injection with either *E. coli* 0111:B4 LPS or *C. albicans* alone (21 and 3% respectively,  $P$  less than 0.01). (ABSTRACT TRUNCATED AT 250 WORDS)

PMID: 1528027 [PubMed - indexed for MEDLINE]

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Antibody immunotherapy of gram-negative bacterial sepsis in an immunosuppressed animal model. [J Infect Dis. 1998]

*Candida albicans* and *Escherichia coli* are synergistic pathogens during experimental microbial sepsis. [J Infect Dis. 1997]

Anti-lipopolysaccharide monoclonal antibodies inhibit macrophage TNF messenger RNA synthesis in mice. [J Infect Dis. 1993]

Anti-interleukin-12 therapy protects mice in lethal endotoxemia but impairs bacterial clearance in murine *Escherichia coli* peritonitis. [J Infect Dis. 1997]

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